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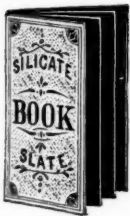
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NEW SERIES.

NEW HAVEN, CONN., AUGUST, 1873.

VOL. III., NO. 8

DISCIPLINE.

BY F. STARR PEABODY, NORTH STONINGTON.

In attempting to speak of this subject, it may not be amiss to intersperse therewith a little of my own experience. The manner of teaching the various branches of study, usually pursued in the Common Schools, has undergone a marked change since my early school days; so has it been in the discipline thereof. Whether for the better or for the worse, it is not my purpose, at this time, to discuss.

Under the olden systems there were to be found solid men and woman that had been reared upon slab-seats and before open fire places; even so now amidst the improvements of the age. In the times gone past, boys and girls were required, in going to and returning from school, to "off hats" and make "courtesies" to people that they might happen to meet. It is quite otherwise now. Once it was, when parents and teachers governed the children. Now, children for the most part are hired or coaxed to do the very things which it is their duty to do. The government administered to children now may be truly denominated a "sugar-coated" one; and yet it seems like barbarism to beat and bruise children for disobedience. There is no necessity for such treatment if a judicious course is early pursued by the parent or teacher. That child must be an obdurate one that will not be influenced by reason and kindness. No chastisements should be administered when excited by passion. No rules should be given of a doubtful bearing. Better never to promise, than promise and not fulfill.

Praise, judiciously used, is a powerful element in gaining the affections of a child. An encouraging word, a silent smile, a gentle pat of the hand, will do much in turning the steps of the wayward into the paths of virtue and rectitude.

Firmness is one of the great essentials to good government. Having first decided upon a course of procedure, a due observance to every requirement should be earnestly and carefully insisted upon.

It is of the utmost importance that teachers should win the esteem of those committed to their charge. If the same time that is usually spent in scolding and faultfinding was devoted to aiding the pupil to master the lesson, there would be occasion for less irregularity. Once get a scholar interested in the study pursued, and folly and rebellion will flee from his presence.

NORMAL TEACHING—WHAT IS IT? No. II.

BY JAMES COWLES, RYE, N. Y.

Now since the capabilities of pupils, and of teachers as well, are various, teachers cannot be uniformly successful. Teachers cannot be constructed into machines, nor can they contract to do their work by the piece. Pupils, who have any mind of their own, resent the treatment as wanting in the respect due to them. The nearest approach to the uniform products of machine-work is made in certain theological seminaries I wot of. You will not certainly commend our capable boys and girls to these schools. Education is designed to cultivate the powers they have—not to remodel the organization. It may be very astute diplomacy in a hierarchy to throw the candidates for its high offices on Procrustes' bed, and stretch or cut to a uniform length all who aspire to its function, but it is not loyalty to duty; for as human faces are not alike—otherwise some people I know would lose their identity—so the nice shades of difference in the molds of mind are meant, not to debar from the society of our friends, but to afford the conditions of a more varied and a finer culture. When, therefore, a teacher, preacher, or lawyer, condemns another for failing to see things in precisely the same dimensions as he does, because he declines using the regulation phrases of the profession, he fails to take the broad views of the subject he is entitled to.

When a college conceives itself as a patented machine for making bricks, it feels the necessity of grinding to impalpable powder all the *grit* in its material, or rejecting it altogether. Moreover it becomes necessary to subject the molded matter to

a *hard-bake* to prevent its falling to pieces. This process destroys its vitality and warps it out of shape. They are no longer "living stones," as the Divine ideal has it. According to this ideal, *grit* is not a bad thing. The rough surfaces may be removed, facets may be cut in it to reflect a borrowed light or radiate its own—a property deeply appreciated by all lovers of brilliants. What then shall be thought of the wit of the class to whom this property is offensive, and who crush it down because they cannot make it take the shape of their mould?

This is not the legitimate business of a school. It may not fret at the faculties and the biases imparted to mind by its author, but gracefully accept its functions of giving those faculties the fullest exercise, and yielding to its biases for its own avocation. Schools may furnish some of the conditions and incentives to study, but dunces graduate from good schools, and capable men issue from private chambers. This may be no fault of the schools, nor any merit in the cloister. The school, with its equipments, may be a constant quantity, an invariable factor of the proposed result, and the actual result may come from the variable factor which the pupil himself supplies.

The Kentucky rifleman provided himself with a trusty gun—his powder is good—his balls skilfully moulded; all he requires is to get sight of his game, and it is very polite in his grace Reynard and Tom Turkey, Esq., to hold still long enough to be shot. But it is not necessary for him to wait for that measure of culture. He has trained his eye and hand to take him at his humor—on the wing, on the stump, or on the jump. With us it is one of the "lost arts," or one to be yet discovered. How to "fetch" a boy on the keen chase for fun—how to win a girl from the pursuit of butterflies, this is the labor. We have seen the utter futility of attempting to bring down the wild Indians of our Western plains with moral precepts, on his buffalo hunts. Our modern faith is no match for this mountain. We must watch for him in his winter wigwam—relaxed, unstrung. Nay, he must be withdrawn from the chase altogether, he must be lariatied to the stake, pinioned to the soil, gathered and settled in communities. Faith is found on trial to have no force when set to work against natural causes—it is a power only in the line of these causes.

Is not much of our labor in teaching like the effort of some of our Christian missionaries to preach the gospel to wild Indians on the buffalo trail? breath urged against the east wind, steam gener-

ated in a tea-top. The subjects of the grace that is to be, must be brought in, somehow—this is the question—how? By setting daily tables of candies and fruits, shaking the corn-dish and calling nan! nan! as Mr. Wickersham, of Pennsylvania, would have us, or by force of police, like the shooting-matchers at Thanksgiving, nab them at their roosts and tie them to the platform!

THE HOUSE WE LIVE IN.—No. II.

BY DR. S. D. GILBERT, FAIR HAVEN.

In my first article I spoke of the bones and joints. Now I have a few words to say about the muscles. There are about 400 muscles in the human body, varying in size from the gastrocnemius, which forms the chief bulk of the back of the leg, and the Sartorius or tailor's muscle (so called because it is the muscle used in taking the tailor's position on the bench), whose fibres are over two feet in length, to the Stapedius, a muscle of the internal ear, whose fibres are only one-fifth of an inch long, and whose weight is one grain. Some of the muscular fibres of the iris are only one-thirtieth of an inch in length.

Muscles have several uses, one of which is that they give beauty and symmetry to the form. Upon their shape and disposition mainly depend the particular contours of the human body. The muscles of the trunk are broad and flat, while those of the limbs are long and narrow. A well-proportioned arm derives its grace and beauty from the muscles. They derive their greatest importance from the fact that they are organs of motion, and that they are so by reason of their power of contracting and extending. It is the contraction and extension of the muscles of the leg and thigh which enable us to take the first step in walking. What is it that enables the fox-hound and race-horse to move so rapidly? It is the rapid contraction and extension of the muscles. A horse has run at the rate of 56 miles per hour. To do this, he must have made over 300 leaps per minute, and there must have been about 600 muscular movements in each minute. Think how rapidly a pianist runs over the keys. Think how many syllables a fluent orator will articulate per minute. This is all the work of the muscles. Muscles are of two kinds, viz., those of voluntary or animal life, as the muscles of the hand, arm, etc., and those of involuntary or organic life, as the muscular coating of the digestive tube, muscles of the respiratory organs; etc.

The muscles of animal life are capable of being

controlled or exerted by the will. They are composed of bundles of fibres inclosed in a delicate web called areolar tissue. Each bundle consists of many smaller ones, and these again of those still smaller of primitive fasciculi (little bundles). A good idea of the structure of some muscles may be obtained from the flesh of animals used for food. For instance, the arrangement of the muscles on the leg of a fowl is similar in many respects to those corresponding to them, in man. These general facts about the muscular system may be made interesting to children, and many more concerning the same subject can be learned from any good textbook, such as Jarvis' or Dalton's Physiology.

Muscles are named from their situation, as the *Tibialis Anticus*, because it is situated on the anterior side of the chief bone of the leg or tibia—from their direction, as the *Transversalis*; from their uses, as flexors, abductors, etc.; from their shape, as the trapezius; from the number of their divisions, as the biceps having two heads, the triceps having three heads; from their points of attachment, as the *Sterno-hyoid*, extending from the sternum or breast-bone to the hyoid or tongue-bone. But the chief point of interest to teachers with regard to the muscular system, is the best way to develop it in children, so that they may grow up strong and hardy. "The blood is the life" of the muscles, as well as of every other part of the man; and in order that the blood may be pure, there must be a supply of good nourishing food, and it must be properly aerated by air, which is also pure and comfortable.

Exercise increases the flow of blood to the muscles, and hence gives a greater supply of nourishment; and when a part is well nourished, as a natural result, it grows. Exercise within proper limits increases their size and strength, while want of exercise makes them soft and weak. The farmer boy, brought up on the old homestead, where he has had an abundance of healthful outdoor exercise, has been accustomed to eat good, plain, wholesome food, leaves home to attend the school or academy. He brings with him a bright sun-burned face, his eye sparkling with life, and his muscles hard and firm. He rejoices in his strength. He gives up in a great measure his wonted out-door employments, and bends himself assiduously to his books. By-and-by he discovers that his arm is not as large as it used to be, and that his muscles, instead of being firm and tense as formerly, are now soft and flabby. This would not trouble him much, but he discovers that he is not

as strong as he used to be; that he becomes fatigued more easily, and that he cannot endure what he once could and did.

What is the cause of all this? He has made too abrupt a change in diet, amount of exercise, etc., and his mind is now being cultivated at the expense of his body. There is need then of some systematic exercise to meet the exigencies of the case, and this leads to the question, "Is there any system of gymnastics or calisthenics which can be pursued in schools advantageously." The object of all muscular training should be to develop best the muscles and thus strengthen the whole body without producing any undue strain, which will retard the object to be attained. Exercise must not be carried so far as to produce fatigue and exhaustion, for this only weakens. Children especially need that occasions of exercise should be frequent and brief. Muscular exercise produces irritation of the tissue. A certain amount of this irritation is beneficial and necessary to the proper development and health of the muscles; but, carried to the point of fatigue and exhaustion, it becomes injurious. And with children, this point is reached much sooner than in the case of older persons.

A short time since, when calling on a leading physician in New York City, I was asked to visit his nursery and see his children perform with the dumb-bells. Four boys, the youngest of whom was three and the oldest six, "put up" dumb-bells weighing two pounds each. This they are accustomed to do twice daily. Although the children seemed perfectly well and hearty, I still have doubts whether it is wise for young children to lift such weights. Such exercises as Dr. Dio Lewis teaches, seem to me to be better—using wooden dumb-bells, and calling the different muscles into action by elevating and extending the arms in quick succession, flexing the fore-arm upon the arm, using the rings, and the different apparatus of his invention; and, in short, following out the system of light gymnastics taught by him and laid down in his books. These gradually develop the muscles in size and firmness of texture, while obviating all danger from straining and over-exercise.

Keeping any of the muscles in a state of tension or contraction for a length of time, has a tendency to weaken the muscle and destroy the power of voluntary action. The beggar in India, who holds his hand above his head, and tells passers by that he cannot bring it down to his side, in hope of extracting a few stray coppers from their pockets, finally finds that it is no longer a farce, but a

reality ; that his muscles have wasted away, and that he cannot now take his hand down if he would. Hence the need of frequent changes in position in sitting or standing, especially in the case of children.

We often notice that men who write a great deal have their right shoulder higher than the left ; but how much easier is it for children, when their bones and muscles are not hard and tense, to acquire improper positions, and thus become one-sided, round-shouldered, or deformed in some particulars—for all such deviations from nature's standard are deformities, however loth we may be to admit the fact. Muscles may be educated—that is, taught to obey the will instantly. The pupil learning to write has the form of the letters he wishes to make in his mind, long before the muscles of the fingers will obey the will with such accuracy as to produce perfect letters. It is the want of muscular education which makes uncertain the footsteps of the child, long after the muscles will support the weight of his body. The results of muscular education may be witnessed in the work of the penman, the rapid execution of the pianist, the graceful motions of the dancer and skater, the clear enunciation of the vocal elements in reading, speaking, etc.

What effect have the exercises and conditions of the school-room on the development, education, and health of the muscles? I will offer only two or three additional suggestions: First, there is great necessity that a moderate and equable temperature should be maintained, because either excessive heat or cold is prejudicial to that normal and healthy state of the blood, which nourishes the muscles. A hot, dry temperature is as bad as a cold, damp one. A thermometer is needed in every school-room, and when it is there, it must be looked at, and not hung up as if the simple fact of its presence will ensure a proper state of the atmosphere. Second, the necessity exists for frequently assuming upright positions in sitting and standing, so as to rest the muscles of the back and those which are continually kept tense by remaining in one position. The younger the children the more frequent should be the seasons of rest and change of position. The younger a plant, the more careful and oft-repeated attention it needs.

Power to withstand the attacks of disease, and capability of enduring fatigue, depend on the development and training of muscles, and the size, healthy condition, and strength of the nerves and brain. This brings us to the consideration of the brain and nervous system, which will be the subject of the next paper.

THE QUESTION OF CONSOLIDATION.

BY H. B. WIGHAM, NORWALK.

The question has been, or is being agitated in every large town, whether it will be better to place the schools under the management of a town "Board." There are, perhaps, several considerations which hinder a ready decision in this matter. Districts fear if the power of local control is taken from them, their own schools will not receive the particular attention they desire. There are those, also, who fear an increase in expenses. The town "Board" seems to them to be farther from their influence than the district committee ; or it may seem that it is more difficult to secure good men to serve the town than the district. The fact that a few towns, having adopted the town system, have gone back to the old way, makes the timid more fearful of something in ambush.

There are many mistaken notions in regard to the consolidation of the towns. One error is made often by the friends of education in towns where but little interest is manifested in school matters, by their becoming over anxious to put some new, and perhaps somewhat ambitious plan, into immediate operation. They expect everybody to view the matter as they do, and to be ready to take as advanced positions as they do, at the start. They seem to think that the idea is going to force itself into popular favor, without any gradual educating of the people into its cordial adoption. They accordingly bring matters abruptly to an issue. Without considering fully how or in what manner the object may best be accomplished, they strive merely to have the town unite by ballot the different districts. The people not understanding the merits of the system, and the movers themselves having no definite plan laid out, is it any wonder that the whole movement proves a failure, and that the town soon returns to the old path? To succeed in any attempt of the kind, you must have the full and intelligent support of the people, and to accomplish this, you must lead them by gradual and well devised steps. Lead them you may, but you cannot go far beyond them with safety to your cause. A good way to introduce the system in few natural steps may here be suggested. If the town has not already assumed the entire expenses of the schools, here may be the first step. It will not cost any more for the tax-payers to support the schools by an assessment townwise than by districts. Then if the town pays all the expenses, it will need a committee to distribute the money, and

to be responsible for the proper use of it. In fact it will soon be seen that this committee ought to have entire control of all the school interests, and another decided step in advance is now taken.

One objection may be raised here, that a large part of the committee may, by chance, be chosen from a certain part of the town and thereby will favor their locality. This can be remedied by choosing one or more from each district to compose the "Town Committee" or "Board." If some districts are larger than others, select two from the larger and one from the smaller. In this way, each district will be as fairly represented in the Board, as the several towns and counties are in the State legislature. The Board, on organizing, will appoint one of their number to be "Acting School Visitor," who shall keep the Board acquainted with the exact condition of the schools in the town. One of the members can be appointed also, to see that the schools are furnished with necessary fuel, etc., or the representative of each district can have the supplying of the school of that district.

Another trouble is sometimes found; that is, How far shall the teachers be allowed to advance their pupils? Shall the teacher spend so much time upon a few scholars in the higher branches of study? Shall it be allowed in every school regardless of its size? If the town is large enough it is undoubtedly the best for all concerned to have a school separate from the district schools for the larger scholars. If this is not feasible, those schools which number from 100 to 400 pupils can be allowed to have an academic department, and the admission to this department in each school may be free to all districts that are not allowed such department. This arrangement can be continued until the schools, being overcrowded with pupils, need enlarging. Then, instead of each district adding to its building, they can unite and erect an academy or high school building. Under this plan, we have a complete system of consolidation. Teachers would be responsible to the "Acting School Visitor," as the superintendent; he would be responsible to the Board, and they to the town.

Meanwhile, teachers would work with more enthusiasm, by knowing that they are under higher and more thorough supervision; and that they are part of a larger and more weighty organization, whose censure is therefore the more carefully to be avoided, and whose praise is the more earnestly to be won.

ADDRESS OF REV. JAS. F. MATTHEWS, OF CHICAGO.

AT THE GRADUATING EXERCISES, JUNE 27, 1873,
CONN. STATE NORMAL SCHOOL.

"Although from Chicago, I shall not be able on this occasion to talk to you in a way characteristic of that city. In such a speech, a pretty large element of self-glorification would enter. The circumstances of this occasion shut out this element. If you had given me one of those little morsels of land called 'farms,' to speak in, I could have spread myself handsomely, and among other things, I could have told you of that cornfield which I lately rode by, where the horses trotted a plow through a furrow three miles long before they turned, and which it will require a whole regiment to harvest. Or if I were addressing you from the top of your noble Walnut Hill, with this beautiful city spread out at my feet, I could have expatiated there. I could have told you of a city of the West which for forty years has had a growth equal to the creation of a New Britain once a year, and which is therefore equal to-day to forty New Britains. And I do not forget that fiery surge that swept off some five square miles of its finest part, for the prophecy of Rev. Dr. Bellows, which reached forward five years, has already, in less than two years, been so nearly fulfilled, that hardly a cinder stain is to be seen on her garments.

But here I am, in an eastern institution of learning—the State Normal School of good old Connecticut—and I must speak with becoming deference. Not that I could not speak quite boastingly of what the commonwealth of Illinois is doing for the education of her children, for she is doing grandly. Among many other institutions of learning she has a State Normal School of which she may well be proud. As the traveler from Chicago approaches Bloomington his attention is attracted by the splendid building and his admiration is excited. Now as I recently saw that younger sister looking so stylish and pretty out there upon the prairie, I can assure you that I was not a little disappointed on coming to New Britain to find her sister here so homely a girl—so old fashioned. I do not refer of course to these young ladies here in the school, but the homely shell that contains them. I do mean it. I have had a standing regret since I came into this beautiful city and saw the noble school. I am sincere in what I say, and I have no apology to make. I regret to see so excellent a school so uncomfortably housed, and so poorly equipped. It

seems to me that this State ought to leave nothing undone to make it a grand success, so grand is the work it undertakes to do—the work of training teachers. It is one thing to turn out scholars, and quite another thing to turn out teachers. I shall ever remember gratefully what Monson Academy and Yale College did for me. Yet when I went out to teach school, I was like a new knife furnished with many blades—a few big ones, and many little ones—but there was yet no edge to them. So on undertaking to carve out good scholars, I found I could not do it till I had ground and ground the various blades with long work to a cutting edge.

The future of America lies in her children—the many children of the cities—the many more that are scattered among the hills and valleys of the country. Would that in this time of general corruption there were more young men and young ladies to go out well equipped into this work, and with bounding hearts take these fresh young lives and mould them into the noblest manhood and the purest womanhood.

In behalf of the vast regions of the West I say to the State of Connecticut, represented here by her honored Chief Magistrate, and by the State Board of Education, and by one of the most beautiful and thriving of her cities, take this Normal School to your heart and make it all that it needs to be, and I, knowing its instructors, can assure you that it shall be one of the brightest jewels in your royal coronet of schools.

WORD STUDY.—No. VI.

BY PROFESSOR H. N. DAY, NEW HAVEN.

It is seldom that a single word suffices to express an entire thought. In Latin we may take *cave*, *pluit*, and in English, *beware* and, rejecting the *it* as a mere expletive signifying nothing, *it rains*, as examples of the few cases comparatively in which an entire thought can be embodied in a single word. It is necessary to put words together in order to make out the complete thought. This process is, perhaps, more properly denominated *sentence-construction*. It is otherwise known as grammatical construction and grammatical synthesis.

Inasmuch as words are used, not for their own sake, but to express thought, it is plain that the governing principle in construction is to be found in the thought to be expressed. This is a fundamental principle in all art—begin with the idea to be expressed and then express that in the best manner which the material of expression will allow. As nothing marks the true artist more emphatically than this in every department of art, in the laying out of grounds, in architecture, in scul-

ture, in painting, in music, in poetry—so nothing more decisively characterizes the master of language than this—that he has a thought to express, that he clearly discerns its parts and its relations, and then chooses and arranges his words to express these parts and relations of the thought. The practice of sentence-building, as it is called, building up sentences by adding words of different classes one after another, is opposed to the essential nature of language as merely an expression of thought. Its proper influence on the forming mind, under training to the best thinking and the best expression, must be rejected accordingly as vicious and hurtful.

The type form of all thought and consequently of every sentence is exemplified in the simple judgment or assertion, *Venus is bright*. The order of the thought is, the subject *Venus*, the copula *is*, and the predicate *bright*. When any one of the principal elements is to be modified, the principal of construction is that each modifier appear unequivocally to belong to the principal element which it modifies. There are two ways in which this may be made to appear: (1) through the form of the modifying word, and (2) by juxta-position. Languages that are largely inflected admit, as is well known, of wide deviations from the order of arrangement which the order proper to thought prescribes. In monosyllabic languages the parts of speech, for the most part, cannot be distinguished except by their position in the sentence. It should be remembered, however, that inflections are not merely for indicating to what principal element the word belongs. They are employed for two other purposes in addition—for modifying the thought itself as in tense-inflections, and also for indicating the relations of the parts of the thought, as in case-inflections. Such are the fundamental principles regulating grammatical construction derived at once from the thought, the one determining the order of the principal elements of the sentence, the other, the order of the modifying elements.

There are, however, to be recognized, two other principles of construction which come in more or less to modify those named that are derived from the simple thought. The first is the principle of *emphasis*. This lies in the thought, but in the thought as modified in its character in this respect—that one part is to be made in the expression more prominent than it would be in the simple unemphasized thought. For example, to show that it is the attribute—*bright*—to which in my communication I wish chief attention to be directed, I change the natural order and say *bright is Venus*. Here we find the ground of the rhetorical principles of inversion. The other principle is derived from the outbody of the word—from the word-sound. Here we find the ground of the several rhetorical principles of melody, rhythm, and harmony, which are each founded on its own characteristic of sound in its very nature or in its relation to thought. The principle of euphony,

also, finds its ground here, although euphony affects but slightly grammatical construction and chiefly governs in word-formation.

These three, then, are to be recognized as the generic and comprehensive principles of grammatical construction as applied to the simple sentence: 1, that from the nature of simple thought; 2, that from emphasized thought; 3, that from word sound regarded in its own nature and properties or in its relations to thought.

These principles receive some modification as applied to the construction of such sentences as are properly compound or are constituted of two or more simple co-ordinate sentences, and also of such as are properly complex, or such as contain other sentences or fragments of sentences which are not co-ordinate with them. But all that can or need be said here is, that these principles are but modifications of those generic principles which have been mentioned, and receive from them their own explanation and their rules for use and application.

Grammatical analysis is the reverse of construction. We start from a given constructed sentence to find the thought and its modifications and relations. The order of proceeding is given at once in the principles of construction. The principal elements of the thought or of the sentence are first to be recognized; then the modifiers of each element respectively; and then the modifications in construction occasioned by emphasis or by the principles of word-sound. If the sentence be compound, its co-ordinate constituents are to be recognized; if complex, the leading sentence is to be discriminated from the foreign constituent which has been taken into itself. This foreign constituent, it will be observed, is to be distinguished as essentially different from any mere modifying clause or modifying phrase on the one hand and from either co-ordinate member of a proper compound sentence, on the other. In the complex sentence, *it is, I believe, a settled question, I believe* is neither a co-ordinate member, nor a proper modifier of any element of the principal sentence. The conjunction *therefore* in the complex sentence, *action therefore was wisely taken*, is of course not a co-ordinate member of a compound sentence nor a representative of one; nor is it a modifier of any element of the principal sentence. It modifies the sentence as a whole in its relation to a preceding sentence.

A THOUGHT FOR TEACHERS TO HEED.—Many lose the opportunity of saying a kind thing by waiting to weigh the matter too long. Our best impulses are too delicate to bear much handling. If you fail to give them expression the moment they rise, they effervesce, evaporate, and are gone. If they do not turn sour, they become flat, losing all life and sparkle by keeping. Speak promptly when you feel kindly.

YOUNG TEACHERS' DEPARTMENT.

GEOGRAPHY.

BY MISS CELESTE E. BUSH, NEW BRITAIN.

At this season we are reminded that there are many new teachers in the small schools throughout the State who are just beginning to find the difficulties of the work they have undertaken, and who may be helped by suggestions from other teachers.

When the excitement of *newness* wears out and fails to give that support which it yielded at first, then comes inevitably a season of depression and discouragement. Plans of work upon which much reliance had been placed will begin to fail, and just here the individuality of the teacher will show itself most clearly by the way in which she will consider and adopt other methods.

One who has felt all these discouragements, and has experimented with many plans, would like to give the one she has found best in teaching Geography to those who may not be satisfied with what they are now doing in that branch. The following method, it is believed, can be carried out even in the most unpromising school; and with no other apparatus than can be improvised by any teacher, though it is better to have wall-maps, globes, gazetteers, and other appliances, if they can be obtained.

The preliminary steps will be to teach the definitions of certain terms, such as island, bay, winds, etc. These, for the sake of system (which underlies all the best work), may be arranged in three groups, something like this:—

1. LAND.	Continents.	Mountains.
	Islands.	Chains.
	Peninsulas.	Ranges.
	Highlands.	Volcanos.
		Peaks.
		Hills.
	Lowlands.	Plains.
		Valleys.
		Prairies.
2. WATER.	Ocean.	Seas.
		Gulfs.
		Channels.
	Interior.	Lakes.
		Rivers.
		Brooks.
3. AIR.	Motions.	Wind.
		Breeze.
		Gale.
	Moisture.	Rain.
		Dew.
		Cloud.

You will need, first, to prepare yourself with brief, accurate definitions of these terms (having

them in your mind so that no book will be necessary). Then take your class out of doors and *show* them brooks, hills, and meadows. Show them that the bog in the middle of the brook has water all around it, while the little tongue of land near by is only partly surrounded. These are the distinctive features of the island, and the peninsula, and they have only to imagine them much larger. After the pupil has *seen* the object and understands the distinguishing features, he is ready to receive and remember your definition. In a like manner teach him that a river differs from a brook only in being longer, wider, and deeper; a mountain from a hill, in being much larger. This exercise may be made doubly valuable by using it to improve the language of your pupils. Let them make their own definitions; it will help them much in expressing their thoughts clearly and well. If you cannot take them out in the field often, it will be well to use pictures and simple drawings.

After as many definitions are learned as are necessary, lessons upon the earth, as a whole, may be given. These are generally arranged in about the same order in all of the text-books, so it will not be necessary to have different classes for the different series. You can make out an analysis of the first lessons for your own use in teaching, which can be something like this:—

1. FORM.
2. SIZE.

3. MOTION.	Rotation.	Axis. Poles. Equator. Parallels. Meridians.
	Revolution.	Tropics. Polar Circles. Zones. Seasons.

Each of these lessons, except size, may be illustrated by the use of a globe, and should be studied as the definitions were: first giving the knowledge objectively; then give name; afterward combine the name with the knowledge in a brief, clear definition.

From this point the most valuable method of study and of recitation will be by map-drawing; but as many good systems are now published, it will not be necessary to extend this article by speaking of it.

EVENINGS WITH THE STARS.—No. VIII.

BY W. B. DWIGHT, NEW BRITAIN.

3. *Remaining constellations of our latitude.* (1). Groups visible in June. Just setting in the north-western sky, pretty well to the northward, will be

seen 8° apart, two stars of the first and second magnitude. The lowest and largest is the ever-beautiful Capella, and the other is Menkalina. The little triangle of small stars near Capella, marking the kids, and the remaining mostly inconspicuous members of this whole group, Auriga the Wagoner, cannot be discerned.

In a line due north of the point of the sickle in Leo, at 12° distance, are two fourth magnitudes close together. These, with a dozen or more fifth magnitudes to the east, constitute the insignificant group of the Lesser Lion (Leo minor.)

North of the eastern extremity of Virgo is Bootes, ever marked by its brightest star Arcturus. This is detected at once as the brightest star nearly overhead in early summer; also, by forming a large equilateral triangle with Spica (in Virgo) and Denebola (in Leo); also by Benig, closely accompanied (on the S. E.) by a little triangular group of smaller stars. Arcturus forms the left knee, and the triangle the left lower limb, of Bootes. There is a striking resemblance between these two first magnitudes, Arcturus and Capella, in their each having in company a sparkling triangle. Capella, however, may always be distinguished at a glance by its companion star of the second magnitude, which Arcturus lacks. Ten degrees east of Arcturus are four small stars closely grouped, forming the right leg of Bootes. At the same distance north-east of Arcturus is an irregular pentagon of stars, third and fourth magnitudes, of which the four southerly form the trunk, and the northerly one the head of the figure. Another standing 10° degrees to the northwest of this pentagon forms the uplifted left arm and completes Bootes, chiefly distinguished for Arcturus.

From 10° to 15° due east of the lower part of the pentagon in Bootes, is seen at a glance, and then never to be forgotten, a glittering semicircle of stars on a diameter of 10°. This is the Northern Crown, Corona Borealis, neatly crowning the heavenly vault in summer, so that every spectator seems to be wearing it on his head. In its center is its gem, Alphacca, a second magnitude. This is a star to be remembered.

For our next very interesting observation we must take a new start from the well-marked square of the zodiacal group of Libra (already learned), 45° due south of the Northern Crown. Take the range of the two stars forming the lower (southeast) side of this square, or rather trapezium of Libra. Extend this range in a northeasterly direction till at 15° distance it strikes two third magnitudes, very close

together, and standing across our line of progress ; keep on for 8° more, and strike a solitary star ; keep on about the same range and distance, and strike two more companion stars standing, just like the others, across our path. Let the range now curve considerably to the eastward, and at the same distance (8°) is a second magnitude star, which ends our ramble on this line. This well-marked course—which classes will catch by the eye in far less time than it takes to describe it by the simple direction, "See those stars stretching away from Libra in a long line curving to the east, in this order, two and one, and two and one"—this course has taken us from the hand (the first two) through the elbow (the first solitary one) and shoulder (the second two) to the head (the second magnitude) of the Serpent Bearer, (Serpentarius). This bright star in the head should be noted as Ras Al Hague. Five degrees to the west of Ras Al Hague, and with it and the two stars of the shoulder forming a small triangle, is a third magnitude, Ras Algetta, marking the head of Hercules. These two men of prowess are putting their heads together, ever concocting some yet undeveloped scheme, and by this juxta position of the heads, we can easily remember the position of these groups. Let us finish Serpentarius first. Corresponding to the two stars of the left shoulder (already marked) are two others precisely similar, in the right shoulder (15° away to the southeast), and forming with Ras Al Hague, in the head, a distinct equilateral triangle. Southwest of this triangle are two rows of third and fourth magnitudes, now easily traced from the map, forming the legs and feet. The left foot (three fifth magnitudes in a row) punches Scorpio in the ribs, or would, if Scorpio had any ribs. Now for the serpent which this hero is mastering. Ten degrees due south of the Northern Crown you see his head, a pentagon of third and fourth magnitudes. At a short interval to the southwest is a solitary, then a little to the southeast are three stars together, then ten more degrees to the southwest we come upon the two stars near Libra, in the left hand of Serpentarius. We have thus marked the head and winding body of the serpent to the point where it is first grasped. It then is supposed to wind around the body and to extend out to the east in stars too obscurely marked to be further described here.

Hercules, an immense sprawling constellation, next commands our attention. Here again is a striking analogy. As the star in the head of Serpentarius makes an equilateral triangle of ten degrees on a side, with two groups of two stars each in

the shoulders, precisely such a triangle, but slightly larger, forms the head and shoulders of Hercules. The two in the right shoulder are very near the head of the serpent ; from the two in the left a line of stars shoots off to the northeast (towards the bright first magnitude Lyra), forming the left arm, with a little square for the hand. North of the last mentioned triangle, will be readily noted a trapezium, with the two southern stars only half as far apart as the two northern ones. These form the central portion of Hercules. From this trapezium two stars five degrees apart stretching east (towards the bright Lyra, which one cannot but recognize), form the left knee, and two more ten degrees due north of the latter, the left foot. Two other stars stretching to the northwest of the trapezium mark the right limb, and thus we have the whole.

East of the trapezium in Hercules, and the most conspicuous star of the northeastern heavens, is Lyra or Vega, of the constellation Lyra or the Harp. Four or five stars forming a rhomboidal figure to the southeast of Lyra, chiefly complete this neat little group. Here we will take breath for a fresh start.

MISCELLANY.

AMERICAN SCHOOL TEACHERS ABROAD.

Altogether, their first introduction to the Old World must be a very novel and gratifying experience to the 150 or more Yankee school masters and school-ma'ams, who, under the protecting wing of Thomas Cook, the veteran English excursion manager, are making a vacation tour through the British isles and on the Continent. Hard-working, worthy representatives the party are of the great army of educational toilers of our country—poorly-paid professors from out-of-the-way colleges, principals of common schools, a small sprinkling of reverends who mingle with their diviner office that of instructor of youth, and, numbering more than all of these, 78 of the school teaching sisterhood, to whom the matter of four or five hundred dollars in gold, which the trip is costing them, is the result of years of scrimping economy and patient saving. Years and years many of them have dreamed in a despairing way of quaint old cities, of grand cathedrals, and of the art-treasures of the lands over the sea. But a continental tour "was not for the likes of them," they have sadly thought as they reckoned up the meagre dollars of their income ; and it was only when the cosmopolitan little Englishman, with his bald pate and twinkling eyes, took in the situation and planned an excursion so cheaply that even

they could afford it, that they clapped their hands and joyfully packed bandbox and trunk for the unexpected fulfillment of their longings.

The party, it will be remembered, left New York by one of the Anchor line of steamers, the 21st of June. By the 1st of July they sighted the north coast of Ireland, and, shortly after, made their first landing for a glimpse of the Giant's Causeway. From there they went to Glasgow, and thence to Edinburgh, where a hearty Scotch welcome awaited them. From the *Edinburgh Courier*, which devotes between two and three columns to the advent of so unwonted a traveling party, we learn that the first evening spent in the Scotch capital was devoted to a conversazione in the Museum of Science and Art, where the teachers were received and welcomed by the Lord Provost (whoever he may be) and a whole bevy of reverends and reverend doctors and distinguished professional citizens generally. Warm-hearted speeches, overflowing with friendly sentiment, and redolent of Scott and Burns, were abundant, and vigorously applauded, while the pipers of the Ninety-first Argyllshire Highlanders, Princess Louise's own regiment, contributed their wild, barbaric strains at intervals, intensifying all the more the Scottish glamor that was upon everything.

The Lord Provost, who presided at the reception, said that he could not sufficiently congratulate the citizens on the arrival in this old country of that distinguished party which had come from the United States, a party of American cousins who were objects of peculiar interest, and whom, at the same time, they met with love as their sons and daughters, as coming from themselves. (Applause.) When they thought of the future of that country, already so great and yet in embryo, and what it might be, compared with themselves, at the end of a short period, when many of the young people present might still be living—it might contain 200,000,000, while we would remain at about the same ratio as we were now—then, he thought, they would agree with him that those present should congratulate themselves on being waited upon by a deputation of that people, who were spreading our name and fame, our language, our customs, and our religion over that vast continent. (Applause.) When that time came, and that country was so great and powerful, it would look back and look up at the same time to the country which had given that name and fame, and which, though comparatively small and feeble, was the cradle of their birth and the cause of all their power. His lordship concluded by offering the deputation in the name of the citizens, their cordial welcome, and stating how proud they were of the visit.

The next day (Sunday) most of the tourists went to the Tron church to hear Rev. Dr. McGregor, who, noting their presence, closed his sermon by saying: "I cannot allow this service to close without saying to those from America, not only in the name of the clergy,

but of our fellow-citizens, how heartily we welcome you to the ancient capital of Scotland. I trust you will carry with you many happy memories of your visit to this city and country and the other lands in which you propose to travel before returning home. Such visits can hardly fail to be of advantage and mutual good, cementing the tie that binds us so firmly together, and which we hope, with God's blessing, will remain unbroken for many generations. Regarding you as the representatives of one of the greatest and most blessed interests on the continent of America—regarding you as the representatives of American education, I may be allowed, in one word, to say how much we feel the hope of your great country is the hope of our own—that it does not lie in your vast material resources, nor in your national energy, nor in your commercial prosperity or enterprise, but in the sound education of your people and in pure and undefiled religion more and more prevailing throughout all parts of your vast territory. We feel more and more that the salt that keeps the breath of society sweet, the salt that preserves a nation from moral corruption, is its righteous, God-fearing men and women. It is because we know that there is in the heart of the great American people true love to their Lord, loyalty to the Master, and fear of God—it is in consideration of that, above all other causes, that we can look forward to a great future for your nation, and a future of usefulness on its part to the world. May the Lord bless you, may the Lord keep you and your nation; may the Lord lift upon you the light of his reconciled countenance, and grant you peace, and give you a prosperous journey and a safe return, with all things needful for this life and the life to come."

Leaving Edinburgh, the tourists visited Abbotsford and Melrose, and the next we hear of them, they are at Derby, the county seat at Derbyshire, located in the beautiful valley of the Derwent in the heart of rural England. Here they received another flattering ovation from the mayor and prominent citizens, and an evening was spent over a grand banquet, plentifully interlarded with toasts and speeches, while an attendant band of music filled in the breaks with the national anthem, Hail Columbia, Yankee Doodle and God Bless the Prince of Wales, in the most impartially promiscuous style. Indeed, the gushing *Derby Mercury* characterizes the event as being the most interesting which has occurred since the Prince and Princess of Wales graced the town with their presence. The talk of the occasion seems to have been as delightful a medley as the music itself. Queen Victoria, President Grant, educational topics, and protestations of eternal friendship, were jumbled together in charming confusion. Mrs. Nelson, a school teacher from Texas, distinguished herself by asserting the right of women to speak in public, and drew a vivid picture of the discouragements and trials of school-teaching among the freedmen of the Southern States. In conclusion, the chairman hoped the gather-

ing would tend to promote a better understanding between both countries, confidently advised the Americans not to take the expressions of opinions and articles in newspapers as representing the feeling of the English nation toward the American people. The articles, he said, were written to sell the newspapers, but the general feeling of the country was often entirely opposed to the sentiment thus expressed, and he believed the same was the case in America.

On the whole, the teachers are being made a good deal of by our British cousins, which is, no doubt, all the more grateful to their modest hearts on account of its entire unexpectedness. They have been toted about through the courtesy of railway companies, in special trains of saloon coaches, and after their reception at Derby, we read of their being the guests for a day of the Earl of Shrewsbury and Talbot at Alton Towers. But England is to be more thoroughly done, on the return of the excursionists from the continent, where, by this time, they must have got well along on their travels. Paris and Vienna are the two principal objective points, but some will extend the journey to Rome; others will visit Switzerland, the Rhine and Belgium. A few do not intend to return with the party, but propose remaining a year or two in England, or on the continent, to improve themselves in various branches of knowledge, and in languages, so as to make themselves better qualified for their work at home.

Messrs. Cook, Son & Jenkins, of 292 Broadway, make all the arrangements for these tours.

—Springfield Republican.

ELECTION OF PROF. DANA TO THE FRENCH ACADEMY OF SCIENCES.

On the seventh of July the order of the day in the "*Académie des Sciences*" was the election of three "*Correspondants*" in the section of Anatomy and Zoology. Five names were presented to the Academy as the result of the secret session in which the merits of candidates for election were discussed—these were Messrs. Steenstrup, of Denmark, Carpenter, Darwin, and Huxley of England, and Dana, from the United States. The votes stood as follows:

1st ballot.	2d ballot.	3d ballot.
Steenstrup, 38	Dana, . . 35	Carpenter, 35
Darwin, 10	Darwin, . 10	Darwin, 12
	blank, 1	Huxley, 1
Total, 48	46	48

Consequently, Messrs. Steenstrup, Dana, and Carpenter were declared elected foreign correspondents of the Academy of Sciences.

Prof. Dana is the only *American*, properly speaking, who is a member of the Academy of Sciences of France, Prof. Agassiz was a member before he came to reside in the United States, having been elected to the section of Anatomy and Zoology in 1839. Prof. Dana was chosen to fill the place made vacant by the death of

Pictet of Geneva. The late Prof. Alex. Dallas Bache was a member under the section of Geography and Navigation. It should be added that Steenstrup was elected to fill the vacancy made by the advance of Prof. Agassiz from the list of Foreign Correspondents to that of Foreign Associates.

An election to the French Academy of Sciences is an honor which has not often fallen to the lot of an American scientist. If we remember correctly, Bache, Agassiz, and Dana are the only Americans. Franklin died (1790) before the organization of the present *Institut de France* (25th of Oct. 1795), but when in Paris was always present at the former society, of which he was, we believe, also a member. Dr. Nathaniel Bowditch, of Boston, was in nomination as Foreign Associate at the time of his death.

A word as to the constitution of the "*Institut de France*,"—which has been either "Imperial" or "National" according as France has been a Monarchy or a Republic—may not be out of place here, at this time. The present "*Institut*" had its origin in the stormy days of the great revolution by a decree dated Aug. 22, 1795, which was followed by the organization of the Institute on the 25th of the next October. This body is in reality only the successor, under another name, and on an enlarged scope, of the *Académie Royale des Sciences* founded in 1666 by Colbert. The Institute of France is divided into five separate Academies. These are: 1st, *L'Académie Française*. 2d, *L'Académie des Inscriptions et Belles-lettres*. 3d, *L'Académie des Sciences*. 4th, *L'Académie des Beaux Arts*, and 5th, *L'Académie des Sciences Morales et Politiques*, the last reinstated by an ordinance dated Oct. 26, 1832 from the old "*Académie Royale*," which had been abolished by an edict of the convention of Aug. 8th, 1793.

Each of these five academies has its own separate organization and membership. Each has an allowance of money from the government for its memoirs and researches, and each had its own secretaries. But the library of the Institute and its scientific and literary collections are enjoyed in common. Under the presidency of the Minister of Public Instruction a committee of ten (10) members—two (2) from each academy—manage the common fund. The elections are by ballot but must be confirmed by the government, who pay each resident member a salary of 1,500 francs and each of the secretaries 6,000 francs. A napoleon is also paid to each member for each meeting of the academy at which he "assists," but he is liable to a fine for prolonged absence and even to expulsion for marked negligence.

In return, the government is at liberty to refer all questions of a scientific or professional character to the Institute for consideration and research, without further compensation for such service. The members of the several Academies are classified (except in the first) as *membres*, *académiciens libres*, *associés étrangers*, and *correspondants*. The 'free academicians' (members at large

we should say in English) attend the meetings but do not vote. The organization of the Institute as a whole, is shown in the following table of the several Academies:

		Perpetual Secretaries.	Free Academicians.	Foreign Associates.	Correspond'g's.	Members.
1.	Académie Française,	1	—	—	—	40
2.	" des Inscriptions et Belles-Lettres,	2	10	8	50	40
3.	" des Sciences,	2	10	8	100	66
4.	" des Beaux-Arts,	1	10	10	40	40
5.	" des Sciences Morales et Politiques,	1	6	6	46	40
		7	36	32	236	226

We find the names of Bancroft, Motley, and Tappan in the fifth academy as foreign correspondents, where also was the late Lieber, of New York. In the fourth academy—that of Fine Arts—America has Chas. C. Perkins, of Boston, in the section of members at large (*academicien libre*).

The *Académie des Sciences* is divided into eleven sections as follows: i., Geometry; ii., Mechanics; iii., Astronomy; iv., Geography and Navigation; v., General Physics; vi., Chemistry; vii., Mineralogy; viii., Botany; ix., Rural Economy; x., Anatomy and Zoology; xi., Medicine and Surgery. Each of these sections has six resident members. In some of the sections the Foreign Correspondents number more members: thus there are 16 foreign astronomers; 8 members in Geography and Navigation; 9 in General Physics; 9 in Chemistry; 8 in Mineralogy; 10 in Botany; 10 in Rural Economy; 10 in Anatomy and Zoology; and 8 in Medicine and Surgery:—making 34 more foreign correspondents than resident members.

As an organization for the promotion of science and art in all its departments, no association of men of learning has been more efficient than the Institute of France. Since its primary organization in 1699 it has rarely failed to publish a yearly volume of Transactions, which are issued in several series, while the weekly journal, known as *Comptes Rendus*, prepared by the perpetual secretaries, contains a full account of all that is done in the Academy of Sciences, including abstracts of memoirs read and of discussions thereon, with correspondence from absent members and others, &c. Large prizes are offered annually for the solution of specific questions or for important researches, and every encouragement is extended for the promotion of original work of all sorts.

In the choice of its associates and correspondents the action of the academy is completely free of all local and personal influences, the sole criterion of choice being the merits of the several candidates.

The selection of Prof. Dana in the section of zoology rather than in that of mineralogy, (including geology), is a proof of the high estimate set by his fellow workers in this department of natural science, upon Prof. Dana's original contributions to the *Zoophytes* and *Crustacea* as well as to the general philosophy and classification of

the animal kingdom, the most of which work was completed nearly twenty years since.

Prof. Dana is now a member of nearly every important academy and society for the advancement of science in Europe, as well as in his own country. None of these recognitions abroad was in its nature more gratifying than the honor conferred a year since by the Royal Bavarian Academy at Munich upon Prof. Dana in his election as "Doctor of Philosophy and Master of Liberal Arts," on occasion of the celebration by the Academy of its four hundredth year from the foundation. On these centennial occasions it is the custom to elect to the Honorary Doctorate some one foreigner of distinction, and the choice fell in 1872 on Prof. Dana.

Baron Liebig, lately deceased, was one of the foreign associates. His place as associate has just been filled by the selection of Sir Chas. Wheatstone, the well known Electrician of London.

EDUCATION OF AMERICAN YOUTH IN EUROPE.

BY PREST. A. JACKSON, D.D., LL.D., TRINITY COLLEGE.

During Colonial days wealthy families not infrequently sent their sons to the mother country to study at Oxford or Cambridge. This course was often adopted by the rich planters of the South, and this turning to the old home of the colonist for the higher education was very natural. The country was new. The means of giving a liberal education were as yet very imperfectly secured. And the unity of life at home and in the colonies was then such that no disruption in a young man's social or political ideas was produced by his studying at an English University. He was not so changed in taste and feeling by his residence abroad as to disqualify him, in any degree, for enjoyment and influence in his colonial home.

The Revolution put an end to this conscious unity of national life, and caused by the snapping asunder of social and political ties, an estrangement which for a long time interrupted the old usage of sending young men to England for education. But there has been within the last quarter of a century an unexampled development of wealth in our country. The Old World, with its architectural monuments, its works of art, its historical places, its scenery, and the new and striking aspects of its social and political life presents irresistible attractions to the energetic race which has founded and built up such a magnificent empire in the new. Hence the immense and ever increasing throng of Americans who have really become an important element of European life. This altered state of things has brought forward the education of boys or young men under a new aspect.

Where families reside in Europe for a number of years it becomes a matter of necessity that the children should be under instruction, public or private, during this period. How far this foreign education may influ-

ence unfavorably the tastes and habits of the youth who are subject to its influence, is not the main question at present. Although, we may remark in passing, that while persons thus educated, especially if the moulding process continue for several years, are likely to speak French with a better accent, to be better connoisseurs in matters of art, they are not likely to be better citizens or happier men and women.

Nor need we dwell on Special Education. Law and Theology are, from the nature of the case, and as a matter of fact, studied abroad to a very limited extent. Medicine is more likely to draw American students to Paris, Edinburgh, and Vienna. But here, again, our own schools have been advanced to such perfection that there is but little to be gained by resorting to foreign universities. Scientific students have been found during the last two decades in considerable numbers in the laboratories of Germany. But there has been within that period a very rapid development of scientific knowledge in our own country, and we think the time not distant when a chemical student can acquire at home all the knowledge which even a Liebig could have imparted to him.

But the kind of education which our wealthy and fashionable people are likely to continue to patronize is that of the Public School and the University. The education of the first kind, whether pursued at the Great Schools of England or those of like grade on the Continent, is surrounded by safeguards, and is far less objectionable than that of the University. The age is still too early for decisive impressions to be received, and the tastes and passions which lead the young astray are not yet felt in their full force. At the Public Schools, of England especially, boys live in the same house with an assistant teacher, under his personal care and supervision. They are thus shielded from temptation and guided in the path of virtue and religion. But in the University, personal supervision is greatly weakened, even where its guarding and guiding force is not wholly lost. Young men here enjoy a freedom of action which too often proves perilous to temperance and purity, especially in a foreign country far away from the customary restraints of home. The easy virtue of American students residing in Paris has often been the subject of comment. How often has the young American, educated at home in the strictest morality, been lured from the path of duty by the siren voice of pleasure in that gay and splendid metropolis? Those of our countrymen who have lived much abroad bear the strongest testimony to the moral dangers which beset our students residing in foreign lands at this critical age.

But the worst evil of this foreign education is yet to be named. It arises from the peculiarly impressionable character of the age at which it is pursued. Neither the boy nor the fully developed man is half so susceptible of deep and lasting impressions as the University student. The young man who spends three or four

years at an English University at this plastic period of his life will, in nine cases out of ten, be moulded to a different civilization—to different, widely different, social ideas and habits, and widely different political sympathies and preferences. I do not say that these ideas and preferences may not be better for England and for any one who is going to make England or the continent his home. This may very well be. And yet these ways and habits may be very undesirable for the young man who is to pass his life in America. John Bright thinks a republican form of government the best for the United States. But he judges a monarchy to suit best the habits and circumstances of England. The question is not what is best in itself, for there is no best in itself. A young man's education must have reference to the country in which he is to live, and the time in which his lot is cast. The most thorough French or German education leaves a man quite unfinished when he reaches our shores. He has to learn many things besides language. He labors under peculiar disadvantages. Mr. Schurtz is, indeed, one example of a person who has surmounted these disadvantages in a very remarkable degree. Suppose a young American to obtain at Cambridge a more thorough mathematical education, or at Oxford more perfect classical training than he could get at home. This is all very well, but it supposes him to be a severe student. Now, how large a proportion of the 2,000 young men at the University of Oxford are close students? Prof. Thorold Rogers, who has written a book on Oxford will tell you, "one in ten." Then the American parent may venture to think that there is one chance in ten that his son will be a thorough student and graduate at Oxford as a "classman." If he is not a hard student how does he pass his time? I read in the last number of the *Guardian* which has reached me a paragraph which will serve to throw light on this subject. The editor is speaking, indeed, of the summer term. "The Long vacation is, at least, a term of peace if not of study; but the warm weeks that precede it are a season of organized amusement. The average Undergraduate attends his compulsory lectures and thinks of cricket. The drag which is to carry him off to an afternoon of pleasure rattles up under his tutor's windows five minutes before the clock strikes, and he sits lighter than ever on his uneasy chair. The whole atmosphere of the place is saturated with physical excitement. College walls, though they still secure a show of discipline, contain a body of young men who are students only in name." Are those of whom this can be said with truth in the summer term likely to be hard students during the other terms of the year? It is quite possible that a young man with superior abilities and high aspirations after culture may go to a foreign university resolved to make the most of his opportunities. In this case fine scholarship may reasonably be expected. But the other countervailing results of a foreign residence at this

impressionable age remain. And if wealth and social vanity are the causes which impel the student to study abroad, then not even the scholarship can be depended on as a compensation for the risks incurred.

Our American education, the higher as well as the lower, has kept pace with the development of the country. Its progress, especially in the direction of the three learned professions, has been very great. It has not been less marked and cheering in the field of science. Its advancement in the requirements of the classical curriculum, whose goal is the degree of Bachelor of Arts, has been most gratifying. Few persons are aware how great it is. Imagine a boy entering one of our New England Colleges at the age of twelve or thirteen, and yet this is the age at which Dr. Dwight entered Yale. The average age at which students enter there to-day is probably seventeen. And the same holds true of our other New England colleges. Does not this single fact mark a great advance—a far broader range, if not a more thorough culture in every study now pursued. But, in fine, our American system of education having grown up and developed with the country, is just that which fits a man for his duties in professional, political, and social life; gives him the greatest influence among his fellow citizens, and the largest power of enjoyment.

THE HEAT OF THE MOON.

The Earl of Rosse has shown by experiments that the moon not only reflects heat to the earth (which, of course, must be the case), but that she gives out heat by which she has been herself warmed. The distinction may not perhaps appear clear at first sight to every reader, but it may easily be explained and illustrated. If on a bright summer's day we take a piece of smooth, but not too well polished metal, and by means of it reflect the sun's light upon the face, a sensation of heat will be experienced; this is reflected sun-heat; but if we wait while so holding the metal until the plate has become quite hot under the solar rays we shall recognize a sensation of heat from the near proximity of the plate to the face, even when the plate is so held as not to reflect sun-heat. We can in succession try, first reflected heat alone, before the metal has grown hot; next, the heat which the metal gives out of itself when warmed by the sun's rays; and lastly, the two kinds of heat together, when the metal is caused to reflect sun-heat, and also (being held near the face) to give out a sensible quantity of its own warmth. What Lord Rosse has done has been to show that the full moon sends earthwards both kinds of heat; she reflects solar heat just as she reflects solar light, and she also gives out the heat by which her own surface has been warmed.

It may perhaps occur to the reader how much heat we actually obtain from the full moon. There is a simple way of viewing the matter. If the full moon were ex-

actly as hot as boiling water, we should receive from her just as much heat (leaving the effect of our atmosphere out of account) as we should receive from a small globe as hot as boiling water, and at such a distance as to look just as large as the moon does. Or a disk of metal would serve equally well. Now, the experiment may be easily tried. A bronze half-penny is exactly one inch in diameter, and as the moon's average distance is about 111 times her own diameter, a half-penny at a distance of 111 inches, or three yards and three inches, looks just as large as the moon. Now let a half-penny be put in boiling water for a while, so that it becomes as hot as the water; then that coin taken quickly and set three yards from the observer will give out, for the few moments that its heat remains appreciably that of boiling water, as much heat to the observer as he receives from the full moon supposed to be as hot as boiling water. Or a globe of thin metal, an inch in diameter and full of water at boiling heat, would serve as a more constant artificial moon in respect of heat supply. It need not be thought remarkable, then, if the heat given out by the full moon is not easily measured, or even recognised. Imagine how little the cold of a winter's day would be relieved by the presence, in a room not otherwise warmed, of a one-inch globe of boiling water, three yards away! And by the way, we are here reminded of an estimate by Prof. C. P. Smyth, resulting from observations made on the moon's heat during his Teneriffe experiments. He found the heat equal to that emitted by the hand at a distance of three feet.

—The Spectator.

THE ORIGIN OF METEORS AND COMETS.—Proctor has recently advanced an idea as to the origin of comets and meteors that may seem to be but the revival of an old opinion, and one supposed to have been exploded. The researches of Schiaparelli and Newton and others, in that they showed the meteors to be regular members of the solar system, seem to have temporarily satisfied the inquiry as to the remote origin of these bodies. The former astronomer assumes them to exist generally throughout the interstellar spaces, and to be successively drawn to one and then to another sun, while Proctor reasons that these bodies are now found to travel in groups or streams, that it is difficult to conceive how our sun could draw a connected stream of meteors to itself at any given epoch, and that if these bodies were ejected from the self-luminous stars, we may with equal plausibility suppose similar bodies to have been ejected from the planets of our own system when they were in a molten condition. He accordingly shows the very moderate degree of force required to eject a meteor from the surface of the outer planets, and examines the orbits of such periodical comets and meteors as are at present known. In accordance with the suggestion of A. S. Herschel, he deduces the interesting conclusion that the comets expelled from Jupiter would mostly have a

direct motion, or one in the same direction as his own, while those ejected from Neptune would be as likely to have a retrograde as a direct motion. Proctor concludes that many comets have sprung from Jupiter and Neptune, and at least one from Uranus—the latter being the well-known November meteor streams, or the Leonides, which Hind has shown to be connected with Tempel's comet.

—Scientific Record, in Harper's for August.

A STUDENTS' REGATTA IN GERMANY.—The *Ithaca Journal* prints extracts from a private letter written by an ex-Cornell student of '74, descriptive of a boat race on the River Neckar at Heidelberg, between "scrub" crews of English and American students. The boats were six-oared barges, each rowed by three men and steered by a coxswain. The description is as follows:

"For four days before the Saturday we pulled over the course (nearly two miles) once a day. We had no expectation of winning, but on the contrary, expected to be left far behind, and told everybody so, as did the English also. When the day arrived the English fellows had decorated a large barge, procured a band of music, invited all the English ladies and two or three Americans on board to witness their triumph, and moored the vessel in the middle of the course. After the first race, in which a Brazilian boat, containing one American, was victorious, ours came off. It was the race of the regatta, and the start was perfect. I pulled the two bow oars and acted as captain. At first neither of us took the lead much, but after a mile we were half a length ahead; then, being near the head of the rapids, we put in a spurt, and took the lead by two or three lengths, as far as the bridge. We had only a little blue jack in our bow, while the English boat had the British flag in the stern. Before reaching the bridge the people on the shore began to understand the situation, and commenced shouting. Our friends, who had come to see us beaten, grew excited, yelled at and cheered us, and ran along the road. Others yelled at the English boat to 'hurry up,' and altogether it was an exciting contest. One voice, high above us on the bridge, was heard above all others, 'Hurrah for America!' Below the bridge they slowly gained, but when we passed the barge they were still a length and a half behind. We came in victors by a full length, and then hoisted our silk flag in the stern. Then we had to receive our congratulations, and they were innumerable and fervent. Our fellow American students crowded around and were almost wild with delight; every one had to be shaken hands with, including several strangers and ladies. Such a crestfallen set as the English ladies were, I never saw. The other crew were also terribly put out, the race had such an unexpected ending, and their humiliation, as well as that of their friends, was extreme."

KINDNESS is the music of good will to man, and on this harp the smallest fingers may play heaven's sweetest tunes on earth.

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EDITORIAL.

WE call particular attention to the pointed speech of Rev. James T. Matthews, of Chicago, delivered at the late closing exercises of the Normal School, and given nearly at full length in this number.

It is interesting and instructive to learn from this address how the appearance of the dingy, clumsy structure of the past ages, in which this rich State houses our Normal School, strikes an observant guest from other States. We are glad, and hereby thank our Chicago friend, that in the most courteous and brotherly way he put his impressions into ringing words, and called attention to the reproach which our good State is thus undesignedly casting upon an institution which she has but lately indorsed as important and worthy. The School is fairly successful, and with the increasing encouragement which it is receiving, is bound to become still more so. But, lobster-like, it has grown to a stature when it must cast its shell, and get a more commodious and a finer one, if it is to live and thrive.

The present building is tolerably comfortable within, though too old and worn to allow of that neatness which should be indispensable in every recitation-room. The outside is cheap-looking and gloomy, and utterly unworthy of the cause or of the State. A stranger trying to guess its office from its front elevation could hardly do otherwise than consider it a prison or penitentiary. Even this would seem impossible on second thought, for state prisons are usually magnificent affairs now-a-days.

Our good and wealthy State cannot afford to keep its great teacher-training school so unworthily housed any longer. The truth is that few outside of New Britain know the facts in the case. But all should know them, and act upon them. How much longer shall it be a frequent occurrence for visitors from the States of New York, Pennsylvania,

New Jersey, Massachusetts, and Illinois, and from others, where they have grand structures for their Normal Schools, to lift up their hands in astonishment when they look upon all that Connecticut has done in this line? The most generous thing they can then do is to efface from their minds all remembrance of the building.

Some think that the examples of other States, and the effect we may produce on them, are of no importance to us. This is a profound mistake. Certainly, while we look to the great States of the West for pioneer work of push and thrift unknown to us, they have a right to look to all the States of old New England for the highest examples of refinement and of a cultivated popular sentiment.

We regret exceedingly to have our friend from Chicago return home disappointed in this respect, as far at least as one of our vitally important public buildings is concerned.

THE New York *Times* is now affording a remarkable example of unparalleled thrift in its own rapid development into an enormous circulation, and of the success with which our inventors and machinists meet the increasing demands of this growing age. The machines and pressess in the vaults of that paper have long been a wonder for efficiency and rapidity; but they are utterly distanced by the new ones. We have not space to enumerate the many novel time-savers of the new arrangements, the folding-machines, elevator, etc., but we must call attention to the greatest wonder of all, the new power-press. Till lately, as we all know, the Hoe press has been the great magician in this marvellous work. But under the demands of the last few months, even Hoe has lagged behind. Invention has, of course, come up to the scratch, and Walter, standing on the shoulders of the giant Hoe, but himself plainly no pigmy, has distanced immensely all previous machines. So great is the speed with which the new Walter presses do their work in the New York *Times* office, that it is said that the old Hoe presses, those miracles of yesterday, look as if they were going to sleep in comparison. The merit of the new presses consists mainly in printing both sides of the paper in one operation, requiring no intervention of a human hand, and "registering" or adjusting the two faces to each other exactly and automatically. Thus no limit to the speed is reached, except the time needed to get a distinct impression. Rolls of paper, each containing four miles of length, are put into the machine, are exhausted in less than twenty-five min-

utes, the paper running through at a speed of 1,000 feet per minute, coming out at the same rate finished journals, ready to be folded. Four miles of news well printed in twenty-five minutes! Excellent work can be produced by these machines at the rate of 15,000 or 17,000 complete copies of an eight-page paper per hour.

TEACHERS never will occupy their true position until they aim to be pillars in the social fabric of their districts. And when they wisely and resolutely aim so to be, they will attain the position. We know of at least two of the more important schools in Connecticut—schools which are the great institutions of their localities—whose principals, worthy and excellent men, perfectly capable of making themselves *felt* in the growth of the community, stand deliberately aloof, and outside of their technical school work are nearly nonentities.

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held in Concord, N. H., beginning Tuesday evening, July 8th, and closing on Thursday evening, July 10th. The opening prayer was offered by Rev. F. D. Ayer, and a brief address of welcome was made by Mayor Kimball. President Stebbins responded to the Mayor in a sprightly and happy manner, and then introduced the first lecturer of the session, Prof. Moses T. Brown, of Tufts College, who occupied about an hour and a half in presenting "Charles Dickens as a Reader." This Tuesday evening's lecture was pronounced by some "as good as a play."

Wednesday and Thursday were filled with profitable exercises. C. L. B. Whitney, A.B., of Springfield, Mass., gave an essay on "History and the Study of History in our Schools and Colleges," which was discussed by Prof. E. D. Sanborn, of Dartmouth College; A. D. Mayo, D.D., of Springfield, Mass.; President A. A. Miner, of Tufts College; and Dr. Mark Hopkins, ex-President of Williams College. Principal Larkin Dunton, of the Boston Normal School, lectured on "The Use of Text-books." This subject was discussed by Principal J. C. Greenough, R. I. Normal School, Prof. Sanborn (at times humorously), Prof. Dunton, the venerable Charles Hammond, of Monson (Mass.) Academy, Superintendent Hubbard, of Fitchburg, Mass., and Prof. W. N. Rice, of Wesleyan University, Middletown, Conn. Prof. E. D. Sanborn, of Dartmouth College, gave a fascinating lecture on "The English Language and its Characteristics," and Dr. Mayo discoursed in a fresh and piquant style on "Our Common Schools, the National Instructors in Public Virtue." The sentiments of this address called forth Pres. Miner's "Amen," and approving remarks from not a few gratified listeners. Hon. Amos Hadley, of N. H., gave an essay on School Supervision, in which he took occasion to denounce the custom of sending our youth to Europe to be educated. The largest audience of the session gathered to listen to Chin Laisun, Chinese Commissioner of Education, now of Springfield, Mass., on "The Hieroglyphic Language of China." He spoke an hour in a very pleasing manner, after which he courteously answered several questions from the audience. Prof. Sanborn Tenney, of Williams College, spoke sensibly on the "Teaching of Natural History in our Public Schools." How he would teach this subject, he showed by some illustrations with mineral and animal specimens.

Prof. W. N. Rice, of Middletown, Conn., gave his brilliant oration on the study of the Natural Sci-

ences. A paper by Prof. W. W. Goodwin, of Harvard University, on "The Study of Greek as an Element of Liberal Culture," was read, in the absence of the author, by Pres. Stebbins. The paper was admirable, and was by vote incorporated in the doings of the Institute.

The officers elected for the ensuing year are as follows:—*President*—M. C. Stebbins, of Springfield, Mass.; *Secretary*—W. E. Eaton, of Charlestown, Mass.; *Assistant-Secretary*—T. W. Webster, of Boston, Mass.; *Treasurer*—Geo. A. Walton, of Westfield, Mass.

The list of Vice-Presidents is very long, and includes the following from Connecticut:—Henry Barnard, Ariel Parish, David N. Camp, Henry E. Sawyer, B. G. Northrop, F. F. Barrows, and S. M. Capron. The Connecticut Counsellor is I. N. Carleton.

This forty-fourth session of the Institute, though the attendance was small, was one of the pleasantest and most successful that the Association has ever held.

COLLINSVILLE.—The examination of the Graded School in this place was ended on July 2d, and was creditable to all parties concerned. On July 3d, at 2.30 P.M., exercises were held in the Congregational Church, on the occasion of the graduation of four young lady pupils of the High School department. This is the first occasion of the kind at Collinsville, and is owing in a large measure to the great efficiency of the Principal, Mr. George R. Warner, who has only lately taken hold of this school. High credit must also be given to Mr. Bidwell, the acting school visitor, and to others who effected the grading of the school, and who have placed it in such competent hands.

The acting editors of this journal attended the graduation exercises, and can testify to their excellence and to their promise of a noble career in the future to this young institution.

Owing to the small number of graduates, Mr. Warner judged it best to add to the interest of the occasion by calling out some from the under classes. After several declamations and essays from the latter, the graduating class came on in the following order:

1. "The Brevity and Uncertainty of Life," by Miss Ella Holbrook.
2. "Cobwebs," by Miss Flora Colton.
3. "Air Castles," by Miss Louise Hotchkiss.
4. "Nature," by Miss Adela Garrett.

These essays were thoughtfully written, and de-

livered with grace and simplicity. They indicated careful training in the school.

A report was then given by Mr. Bidwell, acting school visitor. It went considerably into details, criticising freely, and showing a remarkable degree of faithfulness as well as of shrewdness and culture on the part of the acting visitor.

The First Primary was reported as having suffered from change of teacher. After dwelling properly on the importance of having the highest, and not the cheapest and lowest, order of talent in the primary department, Mr. Bidwell remarked that the present teacher was doing very well under the circumstances.

The Second Primary school, (under Miss Carr, Normal School graduate) had got a good start; this teacher keeps the school in good order in a pleasant, cheerful way, much to be commended. Some of the classes were much broken up by prevalent diseases.

The First Intermediate (Miss Ellen Whipple) is in one of the pleasantest rooms in the building. It is well in hand, a spirit of close attention and healthy rivalry being noticed in the recitation.

The Second Intermediate was also favorably reported upon. The higher department, under Mr. Warner and his assistant, Miss Harvey, was warmly commended, especially for the remarkable results in the mathematical branches, where the *principles* seem to have been thoroughly and intelligently mastered in a way rarely accomplished. We regret that we have not room for a full account of this report, which shows Mr. Warner to be a master in his work. Some minor criticisms were made in respect to some of the instructions in this graded school, which we cannot well mention here.

The diplomas were then presented to the graduating class, accompanied by fitting words of advice by Mr. Bidwell. Brief addresses were made by Hon. B. G. Northrop, Principal Carleton, and Mr. W. B. Dwight of the Normal School, and Rev. Mr. Griggs of Collinsville, upon which the exercises were concluded.

MR. A. P. STONE of the Portland High School (editor of the *Maine Journal of Education*) has been appointed Superintendent of Schools at Springfield, Mass. Salary \$3,500.

THE REV. T. De Witt Talmage has accepted the editorship of *The Christian at Work*, and his sermons and articles are to be published exclusively in that journal. Mr. Talmage begins his duties in August.

BOOK NOTICES.

THE LIBERAL EDUCATION OF WOMEN: The Demand and the Method. Edited by James Orton, A.M., Professor in Vassar College. Published by A. S. Barnes & company, New York and Chicago.

Of this book we say emphatically that it has been very ably edited. On this intensely debated question of the day, out of the mass of printed matter the editor has selected only the choicer thoughts of eminent and well balanced minds. All ranting and empty writers have been rigidly excluded, all within these covers is sober, serious, conciliatory thought. Another merit is that although very properly the greater portion of the work is occupied with the advocacy of the higher education, even professional education of women, yet, a fair space is given to the arguments of the "cons." Every one who is at all interested in the Woman question (and that should include to-day the mass of reflecting citizens), will find the merits of both sides of this matter here presented in an admirably convenient form. The articles are from leading English and American writers. No one theory is advocated, but leading views are presented. The question is looked at from all sides.

Among the more important pages are: "The Demand of the Age for the Liberal Education of Women, and how it should be met," by President Raymond; A Historical Sketch (*British Quarterly Review*); On the Study of Science by Women; The Question of Health (*College Courant*); The Suppressed Sex (*Westminister Review*); The Argument for Co-Education, by Prot. Bascom; The Difficulties (*Edinburg Review*), and others. The last article is a masterly one in tone and in argument, showing the grave impediments in the way of professional life for women. By all means have this book.

UNCONSCIOUS ACTION OF THE BRAIN, and Epidemic Delusions. By Dr. W. B. Carpenter, F.R.S. Estes & Lauriat, Boston. Price 25 cts.

Upon the right use of the brain hang momentous issues for us all. The precise function of this prominent organ is still far from being fully understood, but information respecting it is increasing. Powerful minds are at work upon the great psychophysiological question of what constitutes the normal working of the brain, and their investigations seem to be leading us out into the light. Dr. Carpenter is high authority on this subject, and the two masterly lectures which make up the beautiful

pamphlet before us give, in popular form, information of great interest and of much practical value. There is light giving thought for the student in both of these lectures, especially in that on the "Unconscious Action of the Brain."

FOURTEEN WEEKS IN CHEMISTRY. By J. Dorman Steele, Ph.D.
Published by A. S. Barnes and Company, New York and Chicago. Revised edition, with new Nomenclature.

The original edition of this work is now so well known that no especial description is needed. We are certainly favorably impressed with this new and revised edition. The adoption of the new nomenclature alone is a great advantage. Many of the objectionable expressions of the former work have been remodeled, and copious notes of explanation have been added. A full chapter of simple directions for experiments at the end adds much to the interest of the book. No doubt this work will prove acceptable to teachers.

THE MOUTH OF GOLD: A series of Dramatic Sketches, illustrating the Life and Times of Chrysostom. By Edwin Johnson.
New York: A. S. Barnes & Co.; 1873.

Among the good books sent us, this year, this elegant little work takes high rank. From a recent reading, our judgment is that these dramatic sketches are pure in tone, clear in execution, and truthful adumbrations of the mighty Chrysostom.

PUBLISHER'S NOTES.

SOME changes have recently taken place in the old and well-known house of Cowperthwait & Co., Philadelphia, which has made the publication of text-books for schools a specialty for nearly forty years. Mr. Dexter S. Stone and Mr. David Weatherby, Jr., have become partners in the house. The former is well known to the teachers of Connecticut, having for several years represented the books of the firm in this and other New England States. The latter has been officially connected with the schools of Philadelphia. The firm are making large additions to their already extensive list, which is especially popular with New England teachers.

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